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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/608,518

06/24/2003

Jacho Kim

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21186

7590

09/22/2006

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EXAMINER

LAYNO, CARL HERNANDZ

ART UNIT

PAPER NUMBER

3766

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,518

Applicant(s)

KIM ET AL.

Examiner

Carl H. Layno

Art Unit

3766

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,5-9,14,16,17,19 and 20 is/are rejected.
7) ☒ Claim(s) 2-4,10-13,15 and 18 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. Acknowledgment is made of applicant's amendment, which was received by the Office on July 11, 2006.

2. Claims 1-20 are active.

Terminal Disclaimer

3. Acknowledgment is made of applicant's Terminal Disclaimer, which was received by the Office on July 11, 2006. This was approved by the Office on September 11, 2006.

Specification

4. In view of the applicant's modifications to the specification, the Examiner is withdrawing the objections which were made against the specification in the last Office action.

Claim Rejections - 35 USC § 103

5. Applicant's arguments, see papers filed July 11, 2006, with respect to the 35 U.S.C 103(a) rejection of Ayers et al (US 5,814,081) or White (US 5,562,709) in view of Borgerding et al (US 6,058,327) have been fully considered and is partially persuasive. Therefore, the Examiner is withdrawing the Ayers et al (US 5,814,081) patent from the current 35 U.S.C 103(a) rejection. The Examiner remains unconvinced, however, regarding the inapplicability of the

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White and Borgerding et al patents. Consequently, the Examiner is repeating this rejection from the last Office Action minus the Ayers et al reference.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 5-9, 14, 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (US 5,562,709) in view of Borgerding et al (US 6,058,327) (both cited previously in the last Office Action).

In regard to claims 1, 9, and 17, the White (US 5,562,709) patent discloses a dual-chamber atrial defibrillator (Fig.1) capable of performing the step of atrial fibrillation detection. See circuits **52,68,80**. This defibrillator also includes two ventricular sensing channels (RV-RV, RV-CS) having R-wave detection circuits **58,64**, respectively. These circuits are associated with a high threshold (**TH2**) and low threshold (**TH1**) value, respectively. See Fig.2 (col.8, lines 22-28). In use, R-waves detected by these circuits cause an interval timer **82** to start. Timer **82** times a minimum interval criteria, which when completed, enables the device to deliver energy to the patient in synchronization with an R-wave (col.7, lines 15-20 and 35-40). Unlike applicant's device, White does not describe the use of a "dynamically varying threshold".

The Borgerding et al (US 6,058,327) patent recites an implantable heart stimulation device whose R-wave detection circuits (Figs.3 and 4) utilize an automatic variable sensing threshold **Vs(t)** in conjunction with a low threshold level **S** and a high threshold level **B*S**

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(Fig.5). The variable sensing threshold $V_s(t)$ decays exponentially and, hence, is between both threshold values over a period of time. See Fig.5 of Borgerding et al.

To have substituted an R-wave detector capable of using three threshold values (as exemplified by Borgerding et al) versus the two threshold values used by White, would have been an obvious modification to one of ordinary skill in the art in view of the teachings of Borgerding et al which states that this circuitry may be used with “any known cardioversion or defibrillation pulse control circuitry” (col.7, lines 11-13) and that its circuits are particularly well suited to a “dual chamber arrhythmia treatment device” (col.12, lines 14-15).

In regard to claims 5, 6, 19, and 20, the applicant’s attention is directed to the Borgerding et al patent (Fig.5). The modified device of White reads upon applicant’s claims for the case when the low threshold S equals the dynamically varying threshold $V_s(t)$. In this case, the values of B and A for the high threshold ($B*S$ and $A*S$) would represent percentages of the dynamically varying threshold $V_s(t)$.

In regard to claims 7, 8, 14, and 16, the Borgerding et al patent teaches the detection of both atrial and ventricular tachyarrhythmias based upon the detection of R-R intervals (i.e. ventricular rate) or P-P intervals (i.e. atrial rate).

Double Patenting

8. In view of the approval of applicant’s submitted Terminal Disclaimer, the Examiner is withdrawing the nonstatutory double patenting rejection, which was made against claims 17, 18, and 20 in the last Office action.

Allowable Subject Matter

9. Claims 2-4, 10-13, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

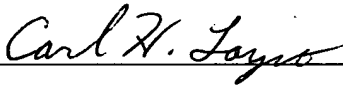
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl H. Layno whose telephone number is (571) 272-4949. The examiner can normally be reached on 9/4/5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on (571) 272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



CARL LAYNO
PRIMARY EXAMINER

CHL
9/11/2006